**RV Brooks McCall Data Summary**
**Cruise 6/25/2010**

Review Date 6/26/10

## Summary:

This sampling report presents data collected from the RV Brooks McCall for the period of 6/25/2010. The RV Brooks McCall will alternate with the Ocean Veritas in the collection of subsurface data associated with the Deepwater Horizon oil spill. The sampling strategy for the day was to continue monitoring in the southwest to gather baseline data for Lawrence Berkley Labs from the benchmark station (located 1.2 km southwest of the wellhead), before trying to locate the northwest edge of the plume. The benchmark station has been visited nine times previously. Stations occupied during this reporting period include BM107 – BM111.

The Brooks McCall included the following definition to provide common terminology on how subsurface oil is referred to:
*Oil Plume*: concentrations of oil (above background) in the water column that appears to be part of a larger pattern of dispersed oil based on real-time fluorometry and LISST particle analysis.

The CTD array data showed fluorescence signals at Stations BM107, BM108 and BM109. No fluorescence signals were observed at Stations BM110 and BM111.

A total of 12,085 gallons of subsurface dispersant was used on 6/25/2010. The average injection rate was not provided.

Rototox tests were started today (6/25/2010) for samples BM107-BM111 with results due to be reported on 6/26/2010. Rototox tests for BM103-BM106 were completed today and results have been submitted. The Brooks McCall also collected eighty-two (82) samples for TPH and eighty-two (82) samples for VOC analysis, including duplicates.

## CTD Fluorometry & Dissolved Oxygen:

Station BM107 was located 2.5 km west-southwest of the well head. BM108 was located 2.7 km southwest of the wellhead. BM109 was located 1.2 km southwest of the wellhead and considered to be the benchmark site. Stations BM110 and BM111 were located 5 km southwest and 3.3 km northwest of the wellhead, respectively. A total of 5 CTD casts were completed on 6/25/2010.

Station BM107 showed fluorescence signals from 1080-1180 m, with dual peaks at 1140 m and 1160 m. A decrease in dissolved oxygen was observed at 940m; this decrease in D.O. is not associated with the fluorescence signals. Station BM108

detected a fluorescence signal from 1140-1170 m. Again, an unassociated decrease in dissolved oxygen was observed at approximately 930 m. Station BM109 had a moderate fluorescence signal from 1060m-1200m, which was a greater thickness than recorded at the other stations on Cruise 9. Immediately above this relatively clean signal there was a lot of noise in the fluorescence extending up to 600m. The relative strength of the lower signal, the noise in the upper signal, combined with the close proximity to the wellhead is interpreted as fresh oil rising towards the surface above a dispersed oil plume. No decreases in dissolved oxygen were associated with the fluorescence signal. No fluorescence signals were detected at Stations BM110 or BM111.

Overall, Cruise 9 sampled around the wellhead during and immediately following removal of the LMRP cap on June 23. The consequent increase in subsurface oil was apparent in the casts, reflected in a stronger fluorescence signal and a greater vertical extent of the signals monitored. Heavy surface oiling was also apparent downwind of the well. Despite the increased discharge of oil, the Brooks McCall reported the subsurface plume to be relatively well identified and is confined primarily to the west and estimated to be 3 km in width and at least 5 km in length.

**LISST Data:**

The LISST data was collected at the four sampled stations. Seventy-seven (77) LISST samples were collected from all five sample locations. Elevated concentrations of small particles were observed at depths corresponding to the subsurface plume detected by the CTD fluorometer. Slightly higher concentrations of small particles were seen at the surface at stations BM109 and BM111 than the other stations samples today.

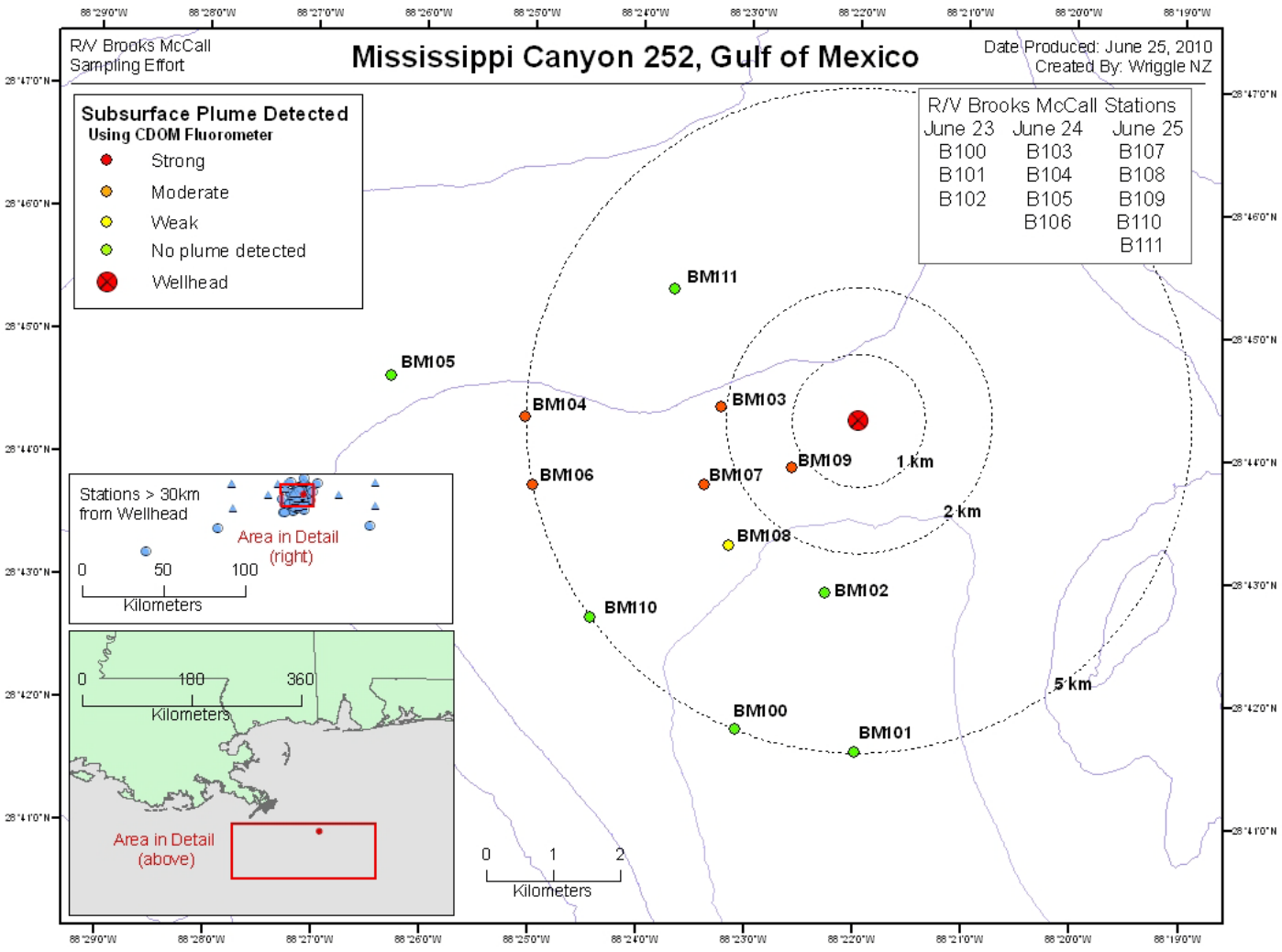
**Toxicity Testing (Rototox Assay) (data collected from 6/25):**

Rototox tests were started today (6/25/2010) for samples BM107-BM111 with results due to be reported on 6/26/2010. Rototox tests for BM103-BM106 were completed today and results have been submitted.

Rototox test results from BM105 had a % survival in the Control of less than 90%, therefore the data were rejected. Results for BM104 showed 66.67% and 70% survival at sample depths 1049m and 1109m, respectively.

**Chemical Analyses (TPH and VOCs) (data collected from 6/25):**

Eighty-two (82) samples were collected for TPH analysis and eighty-two (82) samples were collected for VOC analysis. No data were provided for review at this time due to laboratory lag time.


R/V Brooks McCall
Sampling Effort
Mississippi Canyon 252, Gulf of Mexico
Date Produced: June 25, 2010
Created By: Wriggle NZ
Subsurface Plume Detected
Using CDOM Fluorometer
Strong
Moderate
Weak
No plume detected
Wellhead
R/V Brooks McCall Stations
June 23 June 24 June 25
B100 B103 B107
B101 B104 B108
B102 B105 B109
B106 B110
B111
BM111
BM105
BM104
BM103
BM109
1 km
BM106
BM107
2 km
BM108
BM102
BM110
5 km
BM100
BM101
Stations > 30km
from Wellhead
Area in Detail
(right)
0 50 100
Kilometers
0 180 360
Kilometers
Area in Detail
(above)
0 1 2
Kilometers